

REMARKS

The Examiner is thanked for the thorough review and consideration of the present application. The final Office Action dated September 2, 2003 has been received and its content carefully reviewed.

By this Response, claims 18, 20, 21-22 and 24-25 have been amended. No new matter has been added. Applicants kindly acknowledge the allowable subject matter of claims 1-17 and 26-28. Claims 1-28 are pending in the application. Reconsideration and withdrawal of the rejection of claims 18-25 are requested based upon the above amendments and the following remarks.

In the Office Action, claim 20 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. In particular, the Office Action stated that it is unclear “whether Applicant is referring to the length or the width of the common electrode being wider than the data line.” Applicants have amended claim 20 to clarify “a width of the at least one common electrode is wider than a width of the data line”. Reconsideration and withdrawal of the rejection are requested.

In the Office Action, claims 18-25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,745,207, issued to Asada et al (“Asada”) in view of U.S. Patent No. 6,466,289, issued to Lee et al (“Lee”). Applicants traverse the rejection because neither Asada nor Lee, analyzed alone or in any combination, teach or suggest the combined features recited in the claims of the present application. In particular, Asada and Lee fail to teach or suggest an array substrate for an in-plane switching liquid crystal display device, a method of fabricating an array substrate, and a substrate for a switching liquid crystal display device as recited in claims 18-25.

The Office Action concedes that Asada fails to “explicitly disclose that at least one of the common electrodes overlap the data electrode” as recited in the claims of the present application. To compensate for the deficient teachings of Asada, the Office Action relies upon the teachings of Lee. Based upon the teachings of Lee, the Office Action alleges that it would have been obvious to one of ordinary skill in the art to modify the display device of Asada, per the teachings of Lee, to arrange “the common electrodes in such a way that at least one common

electrode overlap the data lines so that light leakage near the pixel region is prevented and aperture ratio is increased.” Applicants disagree.

Lee discloses a liquid crystal display having a common electrode overlapping with one or more data lines. In Lee, “the first or the second data line and the common electrodes adjacent thereto, which overlap each other, block the light passing through the region between them, and replace a black matrix. Furthermore, the short between the first or the second data lines and the common electrodes, is decreased, because the first and second insulating layers are interposed between the common electrodes and the first and the second data lines. The disconnections of the data line are reduced due to its double-layered structure” (col. 2, lines 26-34). Specifically, “as shown in FIG.2, both the passivation layer 70 and the gate insulating layer 30 are interposed between the second data line 80 and the two common electrode 12 overlapping the second data line 80, therefore reducing a short therebetween” (col. 4, lines 17-21).

As a result, the combination of Asada and Lee would fail to provide an array substrate for an in-plane switching liquid crystal display device, a method of fabricating an array substrate, and a substrate for a switching liquid crystal display device having the combined features recited in the claims of the present application. More particularly, Asada and Lee fail to teach or suggest “a plurality of common electrodes having at least one bent portion, at least one of the common electrodes covering the data line and extending to a neighboring pixel region” as recited in claim 18 and its dependent claim 19.

With regard to claim 20, the Asada and Lee combination fails to teach “forming a data line and source and drain electrodes on the semiconductor layer, the data line having substantially zigzag shape and overlapping at least one common electrode, wherein a width of at least one common electrode is wider than a width of the data line” as recited in independent claim 20.

With regard to claim 21, the Asada and Lee combination fails to teach “forming a common line, a plurality of other common electrodes, a plurality of pixel electrodes and a pixel line on the passivation layer, the common and pixel electrodes having a substantially zigzag shape, wherein the common line and the other common electrodes are formed on the same layer as the pixel electrodes”, as recited in claim 21.

With regard to claim 22, the Asada and Lee combination fails to teach “forming a common line, a plurality of common electrodes, and a plurality of pixel electrodes on the

passivation layer, the common and pixel electrodes having a substantially zigzag shape and being alternated with each other, and at least one overlapping common electrode in a layer above the data line and overlapping a portion of the data line, wherein the common line and the common electrodes are formed on the same layer as the pixel electrodes”, as recited in independent claim 22 and its dependent claim 23.

With regard to claim 24, Asada and Lee fail to teach a substrate for a switching liquid crystal display device that includes “a plurality of common electrodes having at least one bent portion, wherein at least one of the common electrodes is on a layer above the data line, wherein the at least one of the common electrodes overlaps at least a portion of the data line, and wherein the layer is one of a gate insulating layer and a passivation layer”, as recited in independent claim 24.

And, with regard to claim 25, Asada and Lee fail to teach a switching liquid crystal display device that includes “a plurality of common electrodes having at least one bent portion, wherein at least one of the common electrodes is on a layer above the data line, wherein the at least one of the common electrodes covers the data line, and wherein the layer is one of a gate insulating layer and a passivation layer”, as recited in independent claim 25.

Because Asada and Lee fail to teach the combined features recited in claims 18-25, Applicants respectfully submit claims 18-25 are patentable over Asada and Lee. As such, reconsideration and withdrawal of the rejection are requested. If the Examiner deems that a telephone conversation would further the prosecution of this application, the Examiner is invited to call the undersigned at (202) 496-7500.

Application No.: 09/987,038
Amendment dated December 23, 2003
Reply to final Office Action dated September 2, 2003

Docket No.: 8733.537.00-US

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

Dated: December 23, 2003

Respectfully submitted,

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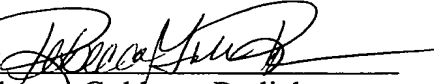
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